Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims:

I claim:

1. (Currently Amended) A system for synchronising stations in a communications network comprising:

at least one airborne or space-based vehicle; and

at least two stations, each station having receiver means in data communication with the at least one airborne or space-based vehicle and control means in data communication with the receiver means and in control communication with a communication means,

~~where~~ wherein, when each receiver means receives a synchronisation signal from the at least one airborne or space-based vehicle:

each receiver means forwards the synchronisation signal to its respective control means;

each control means processes the synchronisation signal to determine the operational frequency required by its respective communication means to maintain or establish communication with the other station; and

each control means controls its respective communication means to change to the determined operational frequency.

2. (Currently Amended) A system for synchronising stations in a communications network according to claim 1, ~~where~~ wherein processing of the synchronisation signal includes iterating a pseudo-random algorithm on receipt of the synchronisation signal and

determining the operational frequency based on the iterated value of the pseudo-random algorithm.

3. (Currently Amended) A system for synchronising stations in a communications network according to claim 2, ~~where~~ wherein a frequency range of each communication means is determined from at least a part of an initial code, the initial code being the initial value of the pseudo-random algorithm.

4. (Currently Amended) A system for synchronising stations in a communications network according to ~~any preceding~~ claim 1, ~~where~~ wherein the operable frequency spectrum is divided into a set of hopping bands, the start frequency of each hopping band being stored in a reference table.

5. (Currently Amended) A system for synchronising stations in a communications network according to claim 4, ~~as dependent on claim 3~~ wherein processing of the synchronisation signal includes iterating a pseudo-random algorithm on receipt of the synchronisation signal and determining the operational frequency based on the iterated value of the pseudo-random algorithm, wherein a frequency range of each communication means is determined from at least part of an initial code, the initial code being the initial value of the pseudo-random algorithm, ~~where~~ and wherein each hopping band has a range equal to the determined frequency range.

6. (Currently Amended) A system for synchronising stations in a ~~computer system~~ communications network according to ~~claim 4 or~~ claim 5~~, as dependent on claim 2 and claim 3~~, wherein the operational frequency required by the communication means to maintain or establish communication with the other station is determined according to the formula:

A. $F = Fb + (C \times Fr) / Y$

~~where~~ wherein:

F = the new operational frequency

Fb = the start frequency of the hopping band currently being used for transmission, as determined by values stored in the reference table;

C = the present value of the pseudo-random algorithm, or a part thereof;

Fr = the maximum allowable range of frequency hop in Hz; and

$Y = 2^{(\text{the number of bits used by C})}$

7. (Currently Amended) A system for synchronising stations in a ~~computer system~~ communications network according to claim 6, ~~where~~ wherein Y = 256.

8. (Currently Amended) A system for synchronising stations in a communications network according to claim 2, ~~where~~ wherein the iterated value of the pseudo-random algorithm is cross-referenced with a frequency table to determine the operational frequency required to maintain or establish communication with the other station.

9. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claims 2, ~~to 8, as dependent on claim 2, where~~ wherein each station includes a synchronisation unit for emitting a synchronisation pulse, and where the synchronisation signal includes time information, the time information being used to calibrate the synchronisation unit and the pseudo-random algorithm being iterated on receipt of each synchronisation pulse.

10. (Currently Amended) A system for synchronising stations in a communications network according to claim 9, ~~where~~ wherein the synchronisation unit emits a predetermined number of synchronisation pulses (R) a second.

11. (Currently Amended) A system for synchronising stations in a communications network according to claim 10, ~~where~~ wherein R is in the range 5 [R [10.

12. (Currently Amended) A system for synchronising stations in a communications network according to claim 11, ~~where~~ wherein R = 5.

13. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claims 2 ~~to 12, as dependent on claim 2, where,~~ wherein, when a new station joins the communications network, synchronisation of the new station with existing stations is attained by setting the value of the pseudo-random algorithm to the initial code and iterating the pseudo-random algorithm according to the formula:

I = S x R

~~where~~ wherein:

I = number of iterations of the pseudo-random algorithm to be performed;

S = number of seconds that have passed since the last predetermined amount of time elapsed; and

R = the predetermined number of synchronisation pulses a second.

14. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claims 2 ~~to 13, as dependent on claim 2, where,~~ wherein, after a predetermined amount of time the pseudo-random algorithm resets its value to equal an initial code, the initial code being the initial value of the pseudo-random algorithm.

15. (Currently Amended) A system for synchronising stations in a communications network according to claim 14, ~~where~~ wherein the predetermined amount of time is 24 hours.

16. (Currently Amended) A system for synchronising stations in a communications network according to claim 15 ~~and any one of claims 10 to 12, where~~, wherein the pseudo-random algorithm performs at least 86400 x R iterations before repeating.

17. (Currently Amended) A system for synchronising stations in a communications network according to claim 4, ~~where~~ wherein the control means operates to avoid determining an operational frequency falling within at least one predetermined hopping band.

18. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claim~~s~~ 2 ~~to 17, as dependent on claim 2, where,~~ wherein, the pseudo-random algorithm is at least a 31 bit algorithm.

19. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claim~~s~~ 2 ~~to 18, as dependent on claim 2, where,~~, wherein, when the pseudo-random algorithm has a value equal to an initial code, the initial code being the initial value of the pseudo-random algorithm, the control means operates to iterate the pseudo-random algorithm a predetermined number of times.

20. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of claims 2 to 19, as dependent on~~ claim 2, ~~where~~ wherein the pseudo-random algorithm is based on the Digital Encryption Standard algorithm.

21. (Currently Amended) A system for synchronising stations in a communications network according to claim 1, ~~where~~ wherein the synchronisation signal includes time information and the time information is cross-referenced with a frequency table to determine the operational frequency required to maintain or establish communication with the other station.

22. (Currently Amended) A system for synchronising stations in a communications network according to ~~any preceding claim~~ claim 1, ~~where~~ wherein the communication means is a transceiver~~;~~.

23. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claim~~s~~ 1 ~~to 21~~, ~~where~~ wherein the communication means of at least one station is a transmitter or transceiver and the communication means of at least one station is a receiver.

24. (Currently Amended) A system for synchronising stations in a communications network according to ~~any preceding~~ claim 1, ~~where~~ wherein the at least one airborne or space-based vehicle is the global positioning system network of satellites.

25. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of~~ claims 1 ~~to 23~~, ~~where~~ wherein the at least one airborne or space-based vehicle is a geosynchronous satellite.

26. (Currently Amended) A system for synchronising stations in a communications network according to ~~any one of claims 2 to 26, as dependent on~~ claim 2, ~~where~~ wherein each station includes a data input means, data input using the data input means operable to seed the pseudo-random algorithm with an initial value.

27. (Currently Amended) A system for synchronising stations in a communications network according to ~~any preceding~~ claim 1, ~~where~~ wherein each station also has a unique identification code and ~~where~~ wherein, when one station, a calling station, communicates with another station, a receiving station:

the calling station transmits a communication message including the unique identification codes of the calling station and receiving station on each frequency in a predetermined set of frequencies, commencing with the operational frequency;

the receiving station records a value of at least one attribute in respect of the transmission signal encapsulating the communication message for each frequency in the predetermined set of frequencies;

the receiving station sends a reply communication message including the unique identification codes of the calling station and receiving station on the frequency having the best recorded value or best combination of recorded values; and

the calling station scans each frequency in the predetermined set of frequencies until the frequency on which the reply communication message has been sent is received,

communications between calling station and receiving station thereafter continuing on that frequency.

28. (Currently Amended) A system for synchronising stations in a communications network according to claim 27, ~~where~~ wherein the calling station transmits a communication message including the unique identification codes of the calling station and receiving station on each frequency in a predetermined set of frequencies twice and where the receiving station records the best value of the at least one attribute in respect of the two transmission signals encapsulating the communication message for each frequency in the predetermined set of frequencies.

29. (Currently Amended) A system for synchronising stations in a communications network according to claim 27, ~~or claim 23, where~~ wherein the at least one attribute includes at least one of the following: signal strength; bit error rate.

30. (Currently Amended) A station for use in a system for synchronising stations in a communication network according to ~~any preceding~~ claim 1.

31. (Original) A method of synchronising stations in a communications network comprising:

receiving, at a first station, a synchronisation signal from at least one airborne or space-based vehicle;

processing the synchronisation signal to determine the operational frequency required to maintain of establish communication with another station; and

changing a communication means to communicate on the operational frequency.

32. (Original) A method of synchronising stations in a communications network according to claim 31, including the step of iterating a pseudo-random algorithm on receipt of the synchronisation signal and the step of processing the synchronisation signal determines the operational frequency based on the iterated value of the pseudo-random algorithm.

33. (Original) A method of synchronising stations in a communications network according to claim 32, including the step of determining a frequency range for the communication means from at least a part of an initial code, the initial code being the initial value of the pseudo-random algorithm.

34. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of~~ claim 31~~s 31 to 33~~, including the steps of dividing the operable frequency spectrum into a set of hopping bands and storing the start frequency of each hopping band stored in a reference table.

35. (Currently Amended) A method of synchronising stations in a communications network according to claim 34, including the steps of iterating a pseudo-random algorithm on receipt of the synchronisation signal wherein the step of processing the synchronisation signal determines the operational frequency based on the iterated value of the pseudo-random algorithm ~~as dependent on claim 33,~~ ; and determining a frequency range for the communication means from at least a part of an initial code, the initial code being the initial value of the pseudo-random algorithm, ~~where~~ wherein the step of dividing the operable frequency spectrum into a set of hopping bands involves dividing the operable frequency spectrum into a set of hopping bands ~~equal~~ each having a range equal to the determined frequency range.

36. (Currently Amended) A method of synchronising stations in a communications network according to ~~claim 34 or~~ claim 35~~, as dependent on claim 32 or claim 33, where~~, wherein the step of determining the operational frequency is determined according to the formula:

$$F = Fb + (C \times Fr) / Y$$

~~where~~ wherein:

F = the new operational frequency

Fb = the start frequency of the hopping band currently being used for transmission, as determined by values stored in the reference table;

C = the present value of the pseudo-random algorithm, or a part thereof;

Fr = the maximum allowable range of frequency hop in Hz; and

$Y = 2^{(\text{the number of bits used by C})}$

37. (Currently Amended) A method of synchronising stations in a communications network according to claim 32, ~~where~~ wherein the step of determining the operational frequency includes the sub-step of cross-referencing the iterated value of the pseudo-random algorithm with a frequency table.

38. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of claims 32 to 37, as dependent on~~ claim 32, including the steps of calibrating a synchronisation unit using time information included in the synchronisation signal; and iterating the pseudo-random algorithm on receipt of a synchronisation pulse emitted by the synchronisation unit.

39. (Currently Amended) A method of synchronising stations in a communications network according to claim 38, including the step of emitting ~~a predetermined~~ a predetermined number of synchronisation pulses (R) a second.

40. (Currently Amended) A method of synchronising stations in a communications network according to claim 39, ~~where~~ wherein R is in the range 5 [R [10.

41. (Currently Amended) A method of synchronising stations in a communications network according to claim 40, ~~where~~ wherein R = 5.

42. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of claims 32 to 41, as dependent on~~ claim 32, including the step of synchronising a new station with existing stations in the communications network by setting the value of the pseudo-random algorithm to an the initial code and iterating the pseudo-random algorithm according to the formula:

I = S x R

~~where~~ wherein:

I = number of iterations of the pseudo-random algorithm to be performed;

S = number of seconds that have passed since the last predetermined amount of time elapsed; and

R = the predetermined number of synchronisation pulses a second.

43. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of claims 32 to 42, as dependent on~~ claim 32, including the step of resetting the value of the pseudo-random algorithm to equal an initial code, the initial code being the initial value of the pseudo-random algorithm, after a predetermined amount of time.

44. (Currently Amended) A method of synchronising stations in a communications network according to claim 42, ~~where~~ wherein the predetermined amount of time is 24 hours.

45. (Original) A method of synchronising stations in a communications network according to claim 34, including the step of avoiding determining an operational frequency falling within at least one predetermined hopping band.

46. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of claims 32 to 45, as dependent on~~ claim 32, including the step of iterating the pseudo-random algorithm a predetermined number of times when the pseudo-random algorithm has a value equal to an initial code, the initial code being the initial value of the pseudo-random algorithm.

47. (Currently Amended) A method of synchronising stations in a communications network according to claim 31, ~~where~~ wherein the step of determining the operational frequency includes the sub-step of cross-referencing time information included in the synchronisation signal with a frequency table.

48. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of claims 32 to 47, as dependent on~~ claim 32, including the step of seeding the pseudo-random algorithm with an initial value using data input means.

49. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of~~ claims 31 ~~to 48~~, including the steps of:

transmitting a communication message including a unique identification code of a calling station and of a receiving station on each frequency in a predetermined set of frequency, commencing with the operational frequency;

scanning each frequency in the predetermined set of frequencies for a reply communication message including the unique identification codes of the calling station and receiving station;

receiving the reply communication message on a frequency having the best recorded value or best combination of recorded values, as determined by a value recorded by the receiving station of at least one attribute in respect of the transmission signal encapsulating the communication message for each frequency in the predetermined set of frequencies; and

communicating with the receiving station on the frequency having the best recorded value or best combination of recorded values.

50. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of~~ claims 31 ~~to 48~~, including the steps of:

receiving a communication message including a unique identification code of a calling station and of a receiving station on each frequency in a predetermined set of frequencies, commencing with the operational frequency;

recording a value of at least one attribute in respect of the transmission signal encapsulating the communication message for each frequency in the predetermined set of frequencies;

sending a reply communication message including the unique identification codes of the calling station and receiving station on the frequency having the best recorded value or best combination of recorded values; and

communicating with the calling station on the frequency having the best recorded value or best combination of recorded values.

51. (Currently Amended) A method of synchronising stations in a communications network according to claim 49, ~~where~~ wherein the step of transmitting a communication message including a unique identification code of a calling station and of a receiving station on each frequency in a predetermined set of frequency, commencing with the operational frequency, is repeated twice.

52. (Currently Amended) A method of synchronising stations in a communications network according to claim 50, ~~where~~ wherein the step of receiving a communication message including a unique identification code of a calling station and of a receiving station on each frequency in a predetermined set of frequencies, commencing with the operational frequency, is repeated twice and the step of recording a value of at least one attribute in respect of the transmission signal encapsulating the communication message for each frequency in the predetermined set of frequencies operates to record the best of the two values.

53. (Currently Amended) A method of synchronising stations in a communications network according to ~~any one of~~ claims 49 ~~to 52~~, ~~where~~ wherein the at least one attribute includes at least one of the following: signal strength; bit error rate.

54 – 56 canceled.